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Stated Meeting, November 15.

Present, twenty-nine members.

Mr. DU PONCEAU, President, in the Chair.

The following donations were received:—

FOR THE LIBRARY.

The Journal of the Royal Asiatic Society of Great Britain and Ireland. Vol. V. No. 10. London, 1839.—*From the Society.*

Journal of the House of Representatives of Pennsylvania. Session of 1838–39. Three Volumes. Harrisburg, 1838–39.—*From the State of Pennsylvania.*

Journal of the Senate of Pennsylvania. Session of 1838–39. Two Volumes, with an Appendix in one Volume. Harrisburg, 1838–39.—*From the same.*

Report of the State Treasurer, showing the Receipts and Expenditures at the Treasury of Pennsylvania, from the first day of November, 1837, to the thirty-first day of October, 1838. Harrisburg, 1838.—*From the same.*

Obras Completas de Luis de Camões, correctas e emendadas pelo cuidado e diligencia de J. V. Barreto Feio e J. G. Monteiro. Three Volumes. Hamburg, 1834.—*From Mr. E. F. França, Minister from Brazil.*

Storia dei Progetti e delle Opere per la Navigazione-Interna del Milanese di Giuseppe Bruschetti. Two Volumes. Milan, 1830.—*From Mr. Lewis Tinelli.*

Catalogo delle Opere più o meno estese in otto diverse Lingue pubblicate dal Conte Cavaliere Jacopo Gräberg da Hemsö. Florence, 1837.—*From the Author.*

Various Tracts relating to the Inhabitants, Geography, Agriculture, and Commerce of Marocco, Algiers, Tripoli, and Tuscany, by Count Jacob Gräberg da Hemsö.—*From the Author.*

Memoria sulla Scoperta dell'America nel Secolo Decimo dettata in Lingua Danese da Carlo Cristino Rafn e tradotta da Jacopo Gräberg da Hemsö. Pisa, 1839.—*From the Translator.*

L'Hivernage des Hollandais à la Nouvelle-Zemble, 1596, 1597, traduit de Tollens, par Auguste Clavareau. Maestricht, 1839.—*From M. Martini, Minister from Holland.*

Caspipina's Letters, to which are added the Life and Character of William Penn. By the Rev. Jacob Duché. Two Volumes. Bath, 1777.—*From Mr. Du Ponceau.*

Conjugation of the Verb "to hear," in its various forms in the Chipewaway Language, by Dr. Edwin James, of Albany.—*From the same.*

Coleccion de los Tratados de Paz, Alianza, Comercio etc. ajustados por la Corona de España con las Potencias Estrangeras desde el Reynado del Señor Don Felipe Quinto hasta el Presente. Three Volumes. Madrid, 1796 to 1801.—*From the same.*

Translation of a Comparative Vocabulary of the Chinese, Corean, and Japanese Languages. Batavia, 1835.—*From Mr. W. H. Medhurst.*

An English and Japanese, and Japanese and English Vocabulary. Compiled from Native Works, by W. H. Medhurst. Batavia, 1830.—*From the same.*

Chinese Testament.—*From the same.*

Three Missionary Malay Tracts.—*From the Rev. Charles Gutzlaff.*

The Proceedings relative to calling the Conventions of 1776 and 1790.

The Minutes of the Convention that formed the present Constitution of Pennsylvania, together with the Charter to William Penn, the Constitutions of 1776 and 1790, and a View of the Proceedings of the Convention of 1776, and the Council of Censors. Harrisburg, 1825.—*From Mr. John Vaughan.*

Enactments by the Rector and Visitors of the University of Virginia. Charlottesville, 1825.—*From Dr. Dunlison.*

Annales des Mines, ou Recueil de Mémoires sur l'Exploitation des Mines. Troisième série. Vol. XV. No. 2, for 1839. Paris, 1839.—*From the Council of Mines.*

The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. No. XLIX, for November, 1839. Philadelphia, 1839.—*From the Editor.*

The committee, consisting of Dr. Patterson, Mr. Justice, and Prof. A. D. Bache, on Mr. E. Otis Kendall's paper, read November 1, and entitled "On the longitude of several places in the United States, as deduced from the observations of the Solar Eclipse of September 18th, 1838. By E. Otis Kendall, Professor of Mathematics in the Central High School of Philadelphia," reported in favour of publication in the Society's

Transactions. The publication was ordered accordingly. The following abstract of the paper was contained in the report of the committee.

The paper contains the reductions of all the observations of the Annular Eclipse of the Sun, September 18th, 1838, yet reported to the Society: together with those of Mr. Hallowell at Alexandria, D.C.; of Messrs. Olmsted, Mason and Smith, at New Haven; and of Mr. J. Blickensderfer, jr. of Dover, Tuscarawas county, Ohio. The computations were made after Bessel's method.

The corrections of the elements in the Nautical Almanac as derived from eight equations of condition, from the durations of the ring, and twelve from that of the eclipse, were

$\epsilon = -14.''782$ = correction of moon's place on true orbit.

$\zeta = -7.''310$ = correction of do. on a secondary to do.

$\eta = -3.''198$ = correction of sum of semi-diameters.

$\eta' = +0.''515$ = correction of difference of do.

In which η and η' refer to Burckhardt's semidiameter of the moon and Bessel's semidiameter of the sun. The value of ϵ is obtained by assuming the longitude of the State House, Philadelphia, to be 5h 0m 39s, west of Greenwich. After applying these corrections of the elements, Mr. Kendall deduces the following longitudes of the places of observation.

The constant value of a was 2.2035 whence, $a\epsilon = -32s.571$. The values in the last column are, calling d' the resulting longitude, not corrected for the errors of the tables.

$d = d' + a\epsilon + b\zeta + c\eta$ for beginning or end.

$d = d' + a\epsilon + b\zeta + c\eta'$ for the annular phase.

Place of Observation.	Mean Time of Observation.			<i>b</i>	<i>c</i>	Longitude—East —West from Greenwich.		
	<i>h</i>	<i>m</i>	<i>s</i>			<i>h</i>	<i>m</i>	<i>s</i>
Western Reserve College, } Hudson, Ohio, }	B. 2	38	17.02	-0.355	+2.332	-5	25	40.70
Dover, Tuscarawas Coun- } ty, Ohio, }	B. 2	39	38.82	-0.372	+2.235	-5	25	52.71
	F. R. 4	0	25.71	-0.848	+2.361			45.44
	R. R. 4	6	9.63	+0.302	-2.224			59.60
	E. 5	18	3.64	-0.151	-2.209			59.45
Alexandria, D. C.	B. 3	5	52.00	-0.298	+2.223	-5	8	24.44
	F. R. 4	24	6.00	-0.093	+2.205			29.16
	R. R. 4	30	13.00	-0.345	-2.229			16.46
	E. 5	39	25.00	-0.131	-2.208			38.79
Washington Capitol,	B. 3	6	9.23	-0.294	+2.223	-5	8	3.25
	F. R. 4	24	27.61	-0.014	+2.204			2.72
	R. R. 4	30	18.05	-0.405	-2.240			2.73
	E. 5	39	54.76	-0.134	-2.208			1.96
Haverford School, Pa.	B. 3	12	17.59	-0.231	+2.216	-5	1	12.03
	F. R. 4	30	29.63	+1.412	+2.617			13.98
	R. R. 4	34	44.80	-1.961	-2.949			13.71
	E. 5	44	28.24	-0.165	-2.210			17.73
Philadelphia State House,	B. 3	13	10.06	-0.229	+2.215	-5	0	37.79
	F. R. 4	31	18.76	+1.420	+2.621			38.72
	R. R. 4	35	31.35	-1.965	-2.952			40.16
	E. 5	45	15.46	-0.164	-2.210			39.32
Germantown, Pa.	B. 3	12	54.90	-0.228	+2.215	-5	0	40.99
	F. R. 4	31	8.90	+1.501	+2.665			40.75
	R. R. 4	35	18.40	-2.070	-3.023			38.83
	E. 5	45	7.90	-0.166	-2.210			36.06
Burlington, N. J.	B. 3	14	23.70	-0.220	+2.214	-4	59	24.69
	F. R. 4	32	32.60	+1.743	+2.810			28.99
	R. R. 4	36	19.60	-2.350	-3.222			29.55
	E. 5	46	8.50	-0.168	-2.210			30.35
Princeton, N. J.	B. 3	14	43.01	-0.167	+2.213	-4	58	43.69
	F. R. 4	33	11.27	+2.245	+3.146			43.68
	E. 5	46	38.89	-0.174	-2.210			30.70
Weasel Mountain, N. J.	B. 3	15	56.98	-0.189	+2.211	-4	56	46.75
	F. R. 4	35	57.09	+6.875	+7.220			48.26
	R. R. 4	35	58.09	-6.912	-7.255			49.10
	E. 5	47	13.10	-0.187	-2.213			51.34
Brooklyn, N. Y.	B. 3	17	18.80	-0.189	+2.211	-4	56	0.02
	F. R. 4	36	47.30	+5.329	+5.766			0.80
	E. 5	48	23.63	-0.184	-2.211			2.31
New Haven,	B. 3	21	14.47	-0.155	+2.209	-4	51	47.65
	E. 5	51	17.00	-0.199	-2.213			56.82
Southwick, Mass.	B. 3	20	19.00	-0.139	+2.208	-4	51	16.92
	E. 5	50	27.00	-0.215	-2.214			20.16
Wesleyan University, Conn.	B. 3	22	0.81	-0.145	+2.208	-4	50	43.62
	E. 5	52	1.46	-0.205	-2.213			41.73
Williamstown College, Mass.	B. 3	17	19.90	-0.132	+2.206	-4	52	26.93
Dorchester Observatory,	B. 3	28	10.90	-0.099	+2.206	-4	44	22.76

The Committee, consisting of Prof. A. D. Bache, Dr. Patterson, and Mr. Walker, on Prof. Loomis's paper, read October 18th, and entitled "Additional Observations of the Magnetic Dip in the United States, by Elias Loomis, Prof. of Mathematics and Natural Philosophy in Western Reserve College," reported in favour of publication in the Transactions of the Society. The publication was ordered accordingly. The following abstract was given in the report of the Committee.

The paper of Prof. Loomis contains the result of his observations of the magnetic dip at twenty-two places in the United States. The stations, with the latitude and longitude of each, the date of the observations for dip, and the determinations resulting from them, are as follows: 1. Hudson, Ohio, lat. $41^{\circ} 15' N.$, long. 5h. 21m. W., August 16th and 19th, 1839, A. M. Dip $72^{\circ} 48'.4$. Buffalo, New York, lat. $42^{\circ} 53' N.$, long. 5h. 16m. W., August 31st, A. M. Dip $74^{\circ} 40'.8$. Oswego, New York, lat. $43^{\circ} 26' N.$, long. 5h. 6m. W., September 1st, A. M. Dip $75^{\circ} 11'.3$. Syracuse, New York, lat. $43^{\circ} N.$, long. 5h. 5m. W., September 2d, A. M. Dip $74^{\circ} 50'.9$. Utica, New York, lat. $43^{\circ} 9' N.$, long. 5h. 1m. W., September 3d, P. M. Dip $74^{\circ} 57'.2$. Schenectady, New York, lat. $42^{\circ} 48' N.$, long. 4h. 56m. W., September 4th, P. M. Dip $74^{\circ} 36'.1$. Albany, New York, lat. $42^{\circ} 39' N.$, long. 4h. 55m. W., September 4th, noon. Dip $74^{\circ} 51'.3$. West Point, New York, lat. $41^{\circ} 25' N.$, long. 4h. 56m. W., September 5th, P. M. Dip $73^{\circ} 27'.4$. New York City, lat. $40^{\circ} 43' N.$, long. 4h. 56m. W., September 9th, A. M. Dip $72^{\circ} 52'.2$. New Haven, Connecticut, lat. $41^{\circ} 18' N.$, long. 4h. 52m. W., September 11th, A. M. Dip $73^{\circ} 26'.7$. Hartford, Connecticut, lat. $41^{\circ} 46' N.$, long. 4h. 51m. W., September 13th, A. M. Dip $73^{\circ} 58'.1$. Springfield, Massachusetts, lat. $42^{\circ} 6' N.$, long. 8h. 50m. W., September 14th, A. M. Dip $74^{\circ} 06'.9$. Longmeadow, Massachusetts, lat. $42^{\circ} 2' N.$, long. 4h. 50m. W., September 14th, P. M., $74^{\circ} 05'.3$. Worcester, Massachusetts, lat. $42^{\circ} 16' N.$, long. 4h. 47m. W., September 16th, P. M. Dip $74^{\circ} 20'.6$. Cambridge, Massachusetts, lat. $42^{\circ} 22' N.$, long. 4h. 44m. W., September 17th, P. M. Dip $74^{\circ} 20'.1$. Providence, Rhode Island, lat. $41^{\circ} 50' N.$, long. 4h. 46m. W., September 19th, P. M., $73^{\circ} 59'.6$. Princeton, New Jersey, lat. $40^{\circ} 22' N.$, long. 4h. 58m. W., September 21st, A. M. Dip $72^{\circ} 47'.1$. Philadelphia, Pennsylvania, lat. $39^{\circ} 57' N.$, long. 5h.

1m. W., September 23d, A. M. Dip $72^{\circ} 7'.1$. Baltimore, Maryland, lat. $39^{\circ} 17'$ N., long. 5h. 7m. W., September 25th, A. M. Dip $71^{\circ} 50'.3$. Washington City, lat. $38^{\circ} 53'$ N., long. 5h. 8m. W., September 25th, P. M. Dip $71^{\circ} 21'.4$. Pittsburgh, Pennsylvania, lat. $40^{\circ} 32'$ N., long. 5h. 20m. W., September 30th, A. M. Dip $72^{\circ} 38'.9$. Beaver, Pennsylvania, lat. $40^{\circ} 44'$ N., long. 5h. 22m. W., October 1st, A. M. Dip $72^{\circ} 40'.3$. Hudson, Ohio, lat. $41^{\circ} 15'$ N., long. 5h. 26m. W., October 7th, P. M. Dip (observations repeated) $72^{\circ} 45'.9$.

These observations were made with the instrument by Gambey, with which the results contained in Prof. Loomis's former paper were obtained. The series is the most extensive yet made in the United States, with which the Committee are acquainted.

The Committee, consisting of Dr. Hare, Dr. Bache, and Mr. Booth, on a paper entitled "On a new compound of deutochloride of platinum, nitric oxide, and hydrochloric acid; by Henry D. Rogers, Professor of Geology in the University of Pennsylvania, and Martin H. Boyè, Graduate of the University of Copenhagen," reported in favour of publication in the Transactions of the Society. The publication was ordered accordingly.

This substance is procured by dissolving platinum in an excess of nitromuriatic acid, and evaporating nearly to dryness; after which it is treated with aqua regia, freshly prepared, from concentrated hydrochloric and nitric acids. A little water is afterwards added, drop by drop, just sufficient to keep the chloride of platinum dissolved, when the compound will remain in the form of a gamboge yellow powder. It is then separated by decanting and filtering, and pressed between the folds of bibulous paper, and dried *in vacuo* over sulphuric acid.

The precipitate is a yellow, minutely crystalline powder, which absorbs water with great avidity. It may be preserved, without decomposition, in dry air, or *in vacuo*. It is decomposed by water, alcohol, &c., with extrication of nitric oxide, chloride of platinum remaining in solution. A concentrated solution of chloride of platinum has, however, no action on it. Heated in an atmosphere of hydrogen, it gives off a large amount of chloride of ammonium, leaving a residuum of metallic platinum.

ANALYSIS.—The salt analysed, was prepared and kept in the man-

ner described. Heated to the temperature of 212° F., it does not part with any of its water of combination. For estimating the amount of platinum and chlorine, the salt was fused with carbonate of potassa, &c., and the platinum, thus obtained, weighed by itself, and the chlorine precipitated from the solution by nitrate of silver.

The quantity of nitric oxide was determined by introducing a portion of the salt into a graduated tube, inverted over mercury, and decomposing it by letting up the requisite proportion of water.

The mean of a series of experiments, varied in different ways, gave

Platinum,	-	41.26	per cent.
Chlorine,	-	43.89	"
Nitric oxide,		4.98	"

The above results correspond to five atoms of bichloride of platinum; five atoms of hydrochloric acid, and two atoms of nitric oxide. The water was calculated from the loss, in the analysis, to be equivalent to ten atoms.

Respecting the chemical nature of this compound, it may be regarded, either as a chloride of platinum, with a muriate of nitric oxide, represented by the following formula, $(Pt Cl^2)^5 + [(Cl H)^5 + (NO^2)^2] + 10 Aq$, or as a double chlorosalt, a chloroplatinate of nitrogen, with a chloroplatinate of hydrogen, represented by the formula, $[(Pt Cl^2)^2 + N Cl^2]^2 + (Pt Cl^2 + H Cl) + 14 Aq$.

Professor A. D. Bache made a verbal communication in which he compared the observations on the magnetic dip by Professor Loomis, contained in his paper ordered this evening for publication, with those given in a paper by Professor Courtenay and himself, read before the Society in 1834.

Professor Bache remarked, that as some of the stations of a series of observations for magnetic dip made by Professor Courtenay and himself, and published in the fifth volume of the Society's Transactions in 1835, were the same as those of the series of Professor Loomis, about to be published, it might be of interest to compare the results. The annexed table was given as containing the places, dates, and results of observations in the two series.

Place.	<i>Series by Professors Bache and Courtenay.</i>		<i>Series by Professor Loomis.</i>	
	Magnetic Dip.	Date.	Magnetic Dip.	Date.
		1834.		1839.
Baltimore,	70° 58'.6	July 19, P. M.	71° 50.3	Sept. 25, A. M.
Philadelphia,	72 00.2	July 25, August 4, P. M.	72 07.1	Sept. 23, A. M.
New York,	72 51.7	August 7, A. M.	72 52.2	Sept. 9, A. M.
West Point,	73 37.2	April, May, June, July.	73 27.4	Sept. 5, P. M.
Providence,	74 02.8	August 8, P. M.	73 59.6	Sept. 19, P. M.
Springfield, Mass.	74 10.7	August 10, A. M.	74 06.9	Sept. 14, A. M.
Albany,	74 40.1	August 11, P. M.	74 51.3	Sept. 4, noon.

Professor Bache further remarked, that in regard to the results for Baltimore, he had at first supposed that an error of a degree had occurred in recording or transcribing the observations of one or other series. The difference of dip between New York and Philadelphia was nearly fifty minutes; and it was, therefore, not probable that that between Philadelphia and Baltimore should be only seventeen minutes, according to the numbers of Professor Loomis as they now stand.

On the other hand, the dip reported by Professor Loomis agrees better with the determination of Professor Patterson at Charlottesville, and of Lieutenant Wilkes at Washington. The discrepancy thus not being easily reconciled, it is much to be desired that other observations should be made at Baltimore.

The agreement of the results for New York, Providence and Springfield, is reasonably close; though, if the diminution of dip in the interval of the two series be considered, the agreement at New York will not be so close. At Philadelphia, Professor Bache has ascertained by recent experiments made for the purpose, that the difference between Professor Loomis and himself might be explained by the difference in the stations used; there being considerable local attraction at one or the other, though he had not yet ascertained which represented most properly the dip due to the position of Philadelphia. The difference at West Point certainly, and that at Albany probably, resulted from using different stations for observation. Professor Courtenay had found the magnetic dip at the middle of the plain at West Point, to differ several minutes from that at his house to the west of the plain. Professor Loomis had used a station near the steamboat landing. At Albany, he had observed near the station formerly used by Professor Henry in the Academy Park; and as the dip found by him in 1839, was nearly the same as that found by Professor Henry in 1834, the discrepancy between them might be considered as amounting

to the diminution of dip in the interval. Professor Bache stated that it was so desirable that each succeeding observer in a given place should, when a well selected site had been employed for observations, use the same, that he had only left the position used by Professor Henry on account of changes which had been made by putting up an iron railing about the Park. In the case of the two series by Professor Loomis, and by Professor Courtenay and himself, the stations did not appear to have been generally in common.

Professor Bache further observed that the diminution of dip at New York, according to his observations, compared with those of Major Sabine, had been at the rate of nine minutes in twelve years, between 1822 and 1835; while those of Professor Loomis would give but eight minutes in seventeen years. Both results are probably too small.

Professor Bache concluded by stating, that the general tenor of the comparison between these two series of observations, indicates that the relative correction for the two pairs of needles was subtractive for those of Professor Loomis, and additive for those which he had used; but that as they had been furnished by the same maker, and were of similar dimensions, there was, until they had been compared with other needles, no just ground of preference for either.

The following resolutions in relation to combined magnetic observations were adopted:

Resolved, That in the opinion of the American Philosophical Society, it is highly desirable that the combined series of magnetic observations now in progress under the direction of the British government, should be extended to the United States, by the establishment of Magnetic Observatories at suitable places.

Resolved, That a Committee be appointed, with authority, on behalf of the Society, to invite the attention of one of the departments of the Government of the United States to the plan for combined magnetic observations, a sketch of which was presented in the documents from a Committee of the Royal Society of London, and to urge co-operation in the plan as a national undertaking, in every way worthy of the United States.

The Committee under the above resolution, consists of Professor Bache, Doctor Patterson, Professor Henry, Mr. Kane, and Colonel Totten.

Professor Bache, reporter, stated that No. 8 of the Proceed-

ings of the Society was in the hands of the Librarian for distribution.

Mr. Fisher reported the decease of Mr. Levett Harris, a member of this Society.

Stated Meeting, December 6.

Present, thirty-two members.

Dr. PATTERSON, Vice-President, in the Chair.

The following donations were received:—

FOR THE LIBRARY.

The Transactions of the Royal Irish Academy. Vol. XVIII. Part Second. Dublin, 1839.—*From the Royal Irish Academy.*

Abhandlungen der Königl. Akademie der Wissenschaften zu Berlin. Aus dem Jahre, 1837. Berlin, 1838.—*From the Royal Academy of Sciences of Berlin.*

Bericht über die zur Bekanntmachung geeigneten Verhandlungen der Königl. Preuss. Akademie der Wissenschaften zu Berlin, im Monat Juli, 1838. Berlin, 1838.—*From the same.*

Roteiro Geral dos Mares, Costas, Ilhas, e Baixos reconhecidos no Globo. Extractado per Ordem da Academia Real das Sciencias, por Antonio Lopes da Costa Almeida. Vol. II. Part Third. Lisbon, 1838.—*From the Royal Academy of Lisbon.*

Compendio de Botanica do Doutor Felix de Avellar Brotero. Apresentado á Academia Real das Sciencias. Vol. II. Lisbon, 1839.—*From the same.*

Astronomia Spherica e Nautica, por Matheus Valente do Couto. Lisbon, 1839.—*From the same.*

Memoria sobre os Pesos e Medidas de Portugal, Espanha, Inglaterra, e França. Por Fortunato Jose Barreiros. Lisbon, 1838.—*From the same.*

Annaes da Marinha Portugueza. Por Ignacio da Costa Quintella. Vol. I. Lisbon, 1839.—*From the same.*